

## **AMENDMENTS TO THE CLAIMS**

### **In the claims**

1. (currently amended) An operations, management, capacity, and services  
5 (OMCS) tool for assessing business solutions comprising alternative network  
architectures and management processes for a telecommunications network, the  
tool comprising:
- (a) means for inputting data and options for plurality of network architectures  
and management processes by an analyst;
- 10 (b) means for engineering the plurality of network architectures based on the  
data and options of (a);
- (c) means for determining suppliers' equipment costs for said plurality of  
network architectures;
- (d) means for engineering the management processes based on the data and  
15 options of (a), wherein the management processes comprising network  
management processes and service and customer management processes  
for managing said plurality of network architectures;
- (e) means for determining suppliers' management processes costs for the  
network management processes and the service and customer management  
20 processes;
- (f) means for validating and calibrating the data and options and the costs for  
the plurality of network architectures and the management processes;
- (g) means for determining, based on the costs of the plurality of network  
architectures and the management processes, business parameters for the  
25 business solutions; and
- (h) means for storing or displaying the business parameters for the business  
solutions for the telecommunications network.
- a means for analyzing business parameters for a plurality of network  
architectures; and
- 30 a means for comparing the business parameters for said network architectures for  
determining cost savings of one network architecture versus another and

~~for determining a business solution that articulates the network architecture  
for reducing total expenditure.~~

~~a means for analyzing business parameters for a plurality of network  
architectures; and~~

5 ~~a means for comparing the business parameters for said network architectures for  
determining cost savings of one network architecture versus another and  
for determining a business solution that articulates the network architecture  
for reducing total expenditure.~~

10 2. (currently amended) [[A]] The tool as described in claim 1, wherein the  
means (a) comprises means for inputting traffic data; customer data; and financial  
and labour data. business parameters comprise the total expenditure; and wherein  
the total expenditure comprises capital expenditure (CAPEX) and operational  
expenditure (OPEX).

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3. (currently amended) [[A]] The tool as described in claim 2, wherein the  
means (a) further comprising:

- means for inputting technology options comprising one or more of the  
following technology: time division multiplexing (TDM), asynchronous  
20 transfer mode (ATM), frame relay (FR), Internet protocol (IP), virtual  
private network (VPN), multi protocol label switching (MPLS), and optical  
Ethernet including fiber, synchronous optical network (SONET), resilience  
packet ring (RPR), and dense wavelength division multiplexing (DWDM) for  
a network architecture for a business solution; and

25 - means for inputting management processes options for the network  
management processes and the service and customer management processes  
for managing the network architecture for the business solution. CAPEX  
comprises a network architecture cost, taxes, interests, and depreciation and  
amortization (D/A) expenses; and the OPEX comprises a management  
30 processes cost, a leasing cost, and sales, general and administration (SG&A)  
expenses.

4. (currently amended) [[A]] The tool as described in claim [[2]] 1, wherein the means (g) comprises:

- means for computing the business parameters further comprise for the business solutions over a pre-determined study period; and
- means for determining one or more of the following business parameters: capital expenditure (CAPEX), wherein the CAPEX comprises a network architecture cost, taxes, interests, and depreciation and amortization (D/A) expenses; operational expenditure (OPEX), wherein the OPEX comprises a management processes cost, a leasing cost, and sales, general and administration (SG&A); revenue; capacity; return on investment (ROI); earnings before interest, taxes, and ~~deprecation~~ depreciation and amortization (EBITDA); earnings before interest and taxes (EBIT); the CAPEX as percentage of the revenue; the OPEX as percentage of the revenue; the D/A as percentage of the revenue; the SG&A as percentage of the revenue; and total expenditure as percentage of the revenue, wherein the total expenditure comprises the CAPEX and the OPEX.

5. (currently amended) [[A]] The tool as described in claim [[1]] 3, wherein the means (b) comprises means for engineering the network architecture for the business solution, wherein the ~~for analyzing the business parameters comprises a means for analyzing the business parameters for a network architecture having~~ one or more of the following technology: TDM, ATM, FR, IP, VPN, MPLS, and optical Ethernet including fiber, SONET, RPR, and DWDM time division multiplexing (TDM), asynchronous transfer mode (ATM), frame relay (FR), Internet protocol (IP), virtual private network (VPN), multi protocol label switching (MPLS), and optical Ethernet including fiber, synchronous optical network (SONET), resilience packet ring (RPR), and dense wavelength division multiplexing (DWDM).

6. (currently amended) [[A]] The tool as described in claim [[5]] 3, wherein the means (d) comprises means for engineering the network management processes and the service and customer management processes for managing the network architecture for the business solution.  
5 ~~for analyzing the business parameters for the plurality of network architectures comprises a means for computing the business parameters for each of said network architectures over a pre-determined study period.~~
7. (currently amended) [[A]] The tool as described in claim [[6]] 4, wherein the means (h) comprises means for displaying the business parameters in tables and graphical charts for the business solutions over the pre-determined study period.  
10 ~~for comparing the business parameters for the plurality of network architectures comprises a means for reporting the business parameters for each of said network architectures over said pre-determined study period; and wherein the business solution comprises the network architecture with the least total expenditure.~~
8. (currently amended) [[A]] The tool as described in claim [[3]] 5, wherein the means (c) comprises means for determining a network architecture cost and a leasing cost for the network architecture for the business solution.  
20 ~~further comprises:—  
a means for engineering a plurality of network architectures for a pre-determined input user data;  
a means for determining a network architecture cost and a leasing cost for each of said network architectures over a pre-determined study period;  
25 a means for engineering management processes for managing each of said network architectures; and  
a means for determining a management processes cost for said management processes over said pre-determined study period.~~
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9. (currently amended) [[A]] The tool as described in claim 8, wherein the means (f) further comprises [[:]] a means for inputting user data; and a means for validating and calibrating the input-user data and options; the network architecture cost; and the leasing cost ; and the management processes cost for each of said network architecture architectures for the business solution.
10. (currently amended) [[A]] The tool as described in claim 8, wherein the means (b) further comprising for engineering the plurality of network architectures comprises a means for determining an owned network elements (NEs) count; a leased NEs count; an owned customer premise equipment (CPE) count; a leased CPE count; an owned links count; a leased links count; and a leased ports count for each of said network architecture architectures; and wherein said network architecture architectures having NEs, CPE, and links from the same or different equipment suppliers.
11. (currently amended) [[A]] The tool as described in claim 10, wherein the means (c) further comprising means for determining the network architecture cost and the leasing cost for each of the plurality of network architectures comprises: a means for determining a price per network element (NE), a footprint per NE cost, and a power consumption per NE cost; a means for determining a price per CPE, a footprint per CPE cost, and a power consumption per CPE cost; and a means for determining a price per link and a link transmission rate.
12. (currently amended) [[A]] The tool as described in claim 11, wherein the means for determining the network architecture cost comprises a means for computing a total owned NEs cost; a total owned CPE cost; and a total owned links cost for each of said network architecture architectures for the business solution over said pre-determined study period; and wherein the means for determining the leasing cost comprises a means for computing a total footprints

cost and a total power consumptions cost for said owned NEs and CPE over said pre-determined study period.

13. (currently amended) [[A]] The tool as described in claim 10, wherein the  
5 means (c) further comprising means for determining ~~the leasing cost further~~  
~~comprises: a means for determining~~ a leased per NE cost, a footprint per NE  
cost, and a power consumption per NE cost; ~~a means for determining~~ a leased  
per CPE cost, a footprint per CPE cost, and a power consumption per CPE cost;  
10 ~~a means for determining~~ a leased per link cost ~~and a link transmission rate; a~~  
~~means for determining~~ a leased link per unit length cost, a unit length per link  
count, and a link transmission rate; ~~and a means for determining~~ a leased per port  
cost.
14. (currently amended) [[A]] The tool as described in claim 13, wherein the  
15 means for determining the leasing cost comprises a means for computing a total  
leased NEs cost; a total leased CPE cost; a total footprints cost and a total power  
consumptions cost for said leased NEs and CPE; a total leased links cost; a total  
leased links [[for]] per unit length cost; and a total leased ports cost for each of  
said network architecture architectures for the business solution ~~over said pre-~~  
20 ~~determined study period.~~
15. (currently amended) [[A]] The tool as described in claim ~~[[8]]~~ 6, wherein the  
means (e) comprises means for determining a management processes cost  
comprising a engineering the management processes ~~comprises means for~~  
25 ~~engineering~~ network management processes cost [.] and a service and customer  
management processes cost for the business solution; ~~and wherein said~~  
management processes having processes from the same or different management  
processes suppliers.
- 30 16. (currently amended) [[A]] The tool as described in claim 15, wherein the  
means for engineering the network management processes comprises a means for

~~selecting~~ engineering one or more of the following processes: inside plant maintenance; outside plant maintenance; network engineering; network provisioning; installation; testing; and repairs.

5 17. (currently amended) [[A]] The tool as described in claim 16, further comprising ~~wherein the~~ means for determining the network management processes cost ~~comprises a means for determining a process cost per NE for each~~ of said network management processes for one or more of the following: a manual operations mode; a mechanized operations mode; and a manual and  
10 mechanized operations mode.

18. (currently amended) [[A]] The tool as described in claim 15, wherein the means for engineering the service and customer management processes comprises a means for selecting engineering one or more of the following  
15 processes: customer relationship management (CRM); work order management (WOM); network inventory management (NIM); service activation and provisioning (SAP); fault management (FM); performance management (PM); accounting and billing; and security management.

20 19. (currently amended) [[A]] The tool as described in claim 18, further comprising ~~wherein the~~ means for determining the service and customer management processes cost ~~comprises a means for determining a process cost per link for each of~~ said service and customer management processes for one or more of the following: a manual operations mode; a mechanized operations  
25 mode; and a manual and mechanized operations mode.

20. (currently amended) A computer-readable medium program containing instructions for directing a computer to perform a process for assessing business solutions comprising alternative network architectures and management  
30 processes for a telecommunication network ~~analyzing business parameters for a plurality of network architectures, and comparing the business parameters for~~

~~said network architectures over a pre-determined study period, the program  
medium comprising:~~

- 5 (i) ~~means for causing the computer to receive data and options for plurality of  
network architectures and management processes from an analyst;~~
- (ii) ~~means for causing the computer to engineer the plurality of network  
architectures based on the data and options of (i);~~
- (iii) ~~means for causing the computer to receive suppliers' equipment costs for  
said plurality of network architectures;~~
- 10 (iv) ~~means for causing the computer to engineer the management processes  
based on the data and options of (i), wherein the management processes  
comprising network management processes and service and customer  
management processes for managing said plurality of network  
architectures;~~
- 15 (v) ~~means for causing the computer to receive suppliers' management  
processes costs for the network management processes and the service and  
customer management processes;~~
- (vi) ~~means for causing the computer to validate and calibrate the received data  
and options and the costs for the plurality of network architectures and the  
management processes;~~
- 20 (vii) ~~means for causing the computer to calculate, based on the costs of the  
plurality of network architectures and the management processes, business  
parameters for the business solutions; and~~
- (viii) ~~means for causing the computer to store or output the business parameters  
for the business solutions for the telecommunications network.~~
- 25 ~~a means for causing the computer to receive data for the plurality of network  
architectures;~~
- ~~a means for causing the computer to analyze the received data to compute the  
business parameters for said network architectures; and~~
- ~~a means for causing the computer to compare said computed business parameters~~
- 30 ~~for said network architectures for determining cost savings of one network~~



~~architecture versus another and for determining a business solution that articulates the network architecture for reducing total expenditure.~~

21. (currently amended) ~~A program~~ The medium as described in claim 20,  
5 wherein the means (i) ~~comprises means~~ for causing the computer to receive ~~traffic data; customer data; and financial and labour data.~~ the data for the plurality of network architectures comprises: a means for causing the computer to receive input user data for said network architectures; a means for causing the computer to receive network architectures data for said network architectures;  
10 and a means for causing the computer to receive management processes data for managing each of said network architectures.
22. (currently amended) ~~A program~~ The medium as described in claim 21,  
wherein the means (i) further comprising:  
15 - ~~means~~ for causing the computer to receive technology options comprising one or more of the following technology: time division multiplexing (TDM), asynchronous transfer mode (ATM), frame relay (FR), Internet protocol (IP), virtual private network (VPN), multi protocol label switching (MPLS), and optical Ethernet including fiber, synchronous optical network (SONET),  
20 resilience packet ring (RPR), and dense wavelength division multiplexing (DWDM) for a network architecture for a business solution; and  
- ~~means~~ for causing the computer to receive management processes options for the network management processes and the service and customer management processes for managing the network architecture for the  
25 business solution. ~~the input user data comprises a means for causing the computer to receive traffic data; customer data; and financial and labour data for the plurality of network architectures.~~
23. (currently amended) ~~A program~~ The medium as described in claim [[21]] 22,  
30 wherein the means (ii) ~~comprises means~~ for causing the computer to ~~receive engineer~~ the network architecture architectures for the business solution, data

comprises means for causing the computer to receive network elements (NEs) data; CPE data; and links and ports data for the plurality of network architectures wherein the network architecture having one or more of the following technology: time division multiplexing (TDM), asynchronous transfer mode (ATM), frame relay (FR), Internet protocol (IP), virtual private network (VPN), multi protocol label switching (MPLS), and optical Ethernet including fiber, synchronous optical network (SONET), resilience packet ring (RPR), and dense wavelength division multiplexing (DWDM).

24. (currently amended) ~~A program~~ The medium as described in claim 23, wherein the means (iii) comprises means for causing the computer to ~~receive the network architectures data~~ further comprises a means for causing the computer to ~~receive network architectures options for the plurality of network architectures~~ compute a network architecture cost and a leasing cost for the network architecture for the business solution.

25. (currently amended) ~~A program~~ The medium as described in claim [[21]] 22, wherein the means (iv) comprises:

- means for causing the computer to engineer one or more of the following network management processes: inside plant maintenance, outside plant maintenance, network engineering, network provisioning, installation, testing, and repairs for managing the network architecture for the business solution; and
- means for causing the computer to engineer one or more of the following service and customer management processes: customer relationship management (CRM), work order management (WOM), network inventory management (NIM), service activation and provisioning (SAP), fault management (FM), performance management (PM), accounting and billing, and security management for managing the network architecture for the business solution. ~~receive the management processes data~~ comprises means for causing the computer to receive network management data; and service

~~and customer management data for managing each of the plurality of network architectures.~~

26. (currently amended) ~~A program~~ The medium as described in claim 25,  
5 wherein the means (v) comprises:
- ~~means for causing the computer to receive the management processes data~~  
~~further comprises means for causing the computer to receive network~~  
~~management options; and service and customer management options for~~  
~~managing each of said network architectures~~ compute a network  
10 management processes cost for the network management processes for one  
or more of the following: a manual operations mode, a mechanized  
operations mode, and a manual and mechanized operations mode;
  - ~~means for causing the computer to compute a service and customer~~  
~~management processes cost for the service and customer management~~  
15 ~~processes for one or more of the following: a manual operations mode, a~~  
~~mechanized operations mode, and a manual and mechanized operations~~  
~~mode; and~~
  - ~~means for causing the computer to compute a management processes cost~~  
~~comprising the network management processes cost and the service and~~  
20 ~~customer management processes cost.~~
27. (currently amended) ~~A program~~ The medium as described in claim 20,  
wherein the means (vii) ~~for causing the computer to analyze the received data~~  
comprises:
- 25 - ~~[[ a]] means for causing the computer to compute the business parameters for~~  
~~said network architectures~~ business solutions over [[said]] a pre-determined  
study period; and
  - ~~means for causing the computer to compute one or more of the following~~  
~~business parameters: capital expenditure (CAPEX), wherein the CAPEX~~  
30 ~~comprises a network architecture cost, taxes, interests, and depreciation and~~  
~~amortization (D/A) expenses; operational expenditure (OPEX), wherein the~~

5                    OPEX comprises a management processes cost, a leasing cost, and sales, general and administration (SG&A); revenue; capacity; return on investment (ROI); earnings before interest, taxes, and depreciation and amortization (EBITDA); earnings before interest and taxes (EBIT); the CAPEX as percentage of the revenue; the OPEX as percentage of the revenue; the D/A as percentage of the revenue; the SG&A as percentage of the revenue; and total expenditure as percentage of the revenue, wherein the total expenditure comprises the CAPEX and the OPEX.

10    28. (currently amended)    ~~A program~~ The medium as described in claim [[20]] 27, wherein the means (viii) for causing the computer to compare said business parameters for said network architectures comprises a means for causing the computer to tabulate and graphically chart the business parameters for said network architectures business solutions over said pre-determined study period.

15                    29. (currently amended)    ~~A computer program~~ The medium as described in claim 20, wherein the ~~program~~ computer-readable medium is a self-contained Microsoft EXCEL-based decision support software tool comprises a plurality of EXCEL workbooks linked together.

20                    30. (currently amended)    ~~A computer program~~ The medium as described in claim 20, wherein the ~~program~~ computer-readable medium is a self-contained software tool comprises a number of sub-programs linked together and the sub-programs are written in one or more of the following computer languages: ~~machine language, C/C++, virtual basic, and Java.~~

25                    language, C/C++, virtual basic, and Java.

30                    31. (currently amended)    A computer-implement method for assessing developing business solutions solution comprising alternative network architectures and management processes for a telecommunications network, the method comprising the steps of:

- (n) inputting data and options for plurality of network architectures and management processes by an analyst;
- (m) engineering the plurality of network architectures based on the data and options of (n);
- 5 (u) determining suppliers' equipment costs for said plurality of network architectures;
- (v) engineering the management processes based on the data and options of (n), wherein the management processes comprising network management processes and service and customer management processes for managing
- 10 said plurality of network architectures;
- (w) determining suppliers' management processes costs for the network management processes and the service and customer management processes;
- (x) determining, based on the costs of the plurality of network architectures and the management processes, business parameters for the business
- 15 solutions;
- (y) validating and calibrating the data and options and the costs for the plurality of network architectures and the management processes; and
- (z) storing or displaying the business parameters for the business solutions for
- 20 the telecommunications network.
- ~~receiving data for a plurality of network architectures;~~
- ~~analyzing the received data to compute business parameters for said network architectures; and~~
- ~~comparing said computed business parameters for said network architectures for~~
- 25 ~~determining cost savings of one network architecture versus another and~~
- ~~for determining a business solution that articulates the network architecture~~
- ~~for reducing total expenditure.~~
32. (currently amended) [[A]] The method as described in claim 31, wherein the
- 30 step (x) comprises:

- computing the business parameters for the business solutions over a pre-determined study period; and
  - determining one or more of the following business parameters: ~~comprise the~~ total expenditure; and wherein the total expenditure comprises CAPEX and OPEX capital expenditure (CAPEX), wherein the CAPEX comprises a network architecture cost, taxes, interests, and depreciation and amortization (D/A) expenses; operational expenditure (OPEX), wherein the OPEX comprises a management processes cost, a leasing cost, and sales, general and administration (SG&A); revenue; capacity; return on investment (ROI); earnings before interest, taxes, and depreciation and amortization (EBITDA); earnings before interest and taxes (EBIT); the CAPEX as percentage of the revenue; the OPEX as percentage of the revenue; the D/A as percentage of the revenue; the SG&A as percentage of the revenue; and total expenditure as percentage of the revenue, wherein the total expenditure comprises the CAPEX and the OPEX.
33. (currently amended) [[A]] The method as described in claim [[32]] 31,  
wherein the step (n) comprises:
- inputting traffic data, customer data, and labour and financial data;
  - inputting technology options comprising one or more of the following technology: time division multiplexing (TDM), asynchronous transfer mode (ATM), frame relay (FR), Internet protocol (IP), virtual private network (VPN), multi protocol label switching (MPLS), and optical Ethernet including fiber, synchronous optical network (SONET), resilience packet ring (RPR), and dense wavelength division multiplexing (DWDM) for a network architecture for a business solution; and
  - inputting management processes options for the network management processes and the service and customer management processes for managing the network architecture for the business solution. ~~business parameters further comprise revenue, capacity, ROI, EBITDA, EBIT, OPEX as percentage of revenue, and total expenditure as percentage of revenue.~~

34. (currently amended) [[A]] The method as described in claim [[31]] 33,  
wherein the step (u) comprises determining a network architecture cost and a  
leasing cost for the network architecture for the business solution.  
5 data comprises a step of receiving input user data; network architectures data;  
management processes data; network architectures options; network  
management processes options; and service and customer management processes  
options for the plurality of network architectures.
- 10 35. (currently amended) [[A]] The method as described in claim [[31]] 34,  
wherein the step (m) comprises engineering the network architecture for the  
business solution, wherein the network architecture having one or more of the  
following technology: time division multiplexing (TDM), asynchronous transfer  
15 mode (ATM), frame relay (FR), Internet protocol (IP), virtual private network  
(VPN), multi protocol label switching (MPLS), and optical Ethernet including  
fiber, synchronous optical network (SONET), resilience packet ring (RPR), and  
dense wavelength division multiplexing (DWDM).  
of analyzing the business  
parameters comprises a step of analyzing the business parameters for a network  
architecture having one or more of the following technology: TDM, ATM, FR,  
20 IP, VPN, MPLS, and optical Ethernet including fiber, SONET, RPR, and  
DWDM.
36. (currently amended) [[A]] The method as described in claim [[35]] 33,  
wherein the step (v) comprises:
- 25 - engineering one or more of the following network management processes:  
inside plant maintenance, outside plant maintenance, network engineering,  
network provisioning, installation, testing, and repairs for managing the  
network architecture for the business solution; and
- 30 - engineering one or more of the following service and customer management  
processes: customer relationship management (CRM), work order  
management (WOM), network inventory management (NIM), service

5                    ~~activation and provisioning (SAP), fault management (FM), performance management (PM), accounting and billing, and security management for managing the network architecture for the business solution, of analyzing the business parameters comprises a step of adjusting and updating data for said network architectures.~~

37. (currently amended)    [[A]] The method as described in claim [[31]] 36,  
wherein the step (w) comprises:
- 10                    - determining a network management processes cost for the network management processes for one or more of the following: a manual operations mode, a mechanized operations mode, and a manual and mechanized operations mode;
  - 15                    - determining a service and customer management processes cost for the service and customer management processes for one or more of the following: a manual operations mode, a mechanized operations mode, and a manual and mechanized operations mode; and
  - 20                    - determining a management processes cost comprising the network management processes cost and the service and customer management processes cost, of comparing the business parameters for the plurality of network architectures comprises a step of reporting said business parameters for said network architectures over a pre-determined study period; and  
wherein the business solution comprises the network architecture with the least total expenditure, and said network architecture having NEs, CPE, and links from the same or different equipment suppliers; and having network  
25                    management processes, and service and customer management processes from the same or different management processes suppliers.

38. (currently amended)    [[A]] The method as described in claim [[37]] 32,  
wherein the step (z) ~~of reporting the business parameters~~ comprises a step of  
30                    tabulating and graphically charting the business parameters for each of said network architectures business solutions over said pre-determined study period.